

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Funke *et al.*

Appl. No.: 10/578,512

§ 371 (c) Date: April 5, 2007

For: **Active Agent Combinations with  
Insecticidal and Acaricidal Properties**

Confirmation No.: 4985

Art Unit: 1616

Examiner: Pak, John D.

**Declaration of Heike Hungenberg under 37 C.F.R. §1.132**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

I, Heike Hungenberg, of Grünwaldstr. 39b, 40764 Langenfeld , Germany, a citizen of Langenfeld, Germany, hereby declare:

1. That I am a biologist having studied at the University of Giessen, Germany.
2. That I received my diploma degree in biology at the University of Giessen, Germany in 1992.
3. That I entered the employment of Bayer in 1992 and that I am presently employed by Bayer CropScience AG, the assignee of the above-captioned application.
4. that I currently hold the position of a scientist within the group of Product and Project Support, in which I supervise the biological tests of insecticides; and that I have held this position for 8 years;
5. that I am named as an inventor in U.S. Patent Application No. 10/578,512 ("Application") which is the U.S. National Phase Application of International Application No. PCT/EP2004/012329, which has been assigned to Bayer CropScience AG

6. that I have read and understand the specification and claims of the Application;

7. that compounds (I-1),( I-2), Abamectin, Diafenthiuron, Spinosad, Endosulfan, and compounds of the formula (II-1), described in the Application, were tested as described in Examples A - I, below;

8. that Examples A -I were carried out under my supervision and direction;

9. that the expected efficacy of a given combination of two compounds is calculated as follows (see Colby, S.R., „Calculating Synergistic and antagonistic Responses of Herbicide Combinations“, Weeds 15, pp. 20-22, 1967):  
If

X is the efficacy expressed in % mortality of the untreated control for test compound A at a concentration of m ppm respectively m g/ha,  
Y is the efficacy expressed in % mortality of the untreated control for test compound B at a concentration of n ppm respectively n g/ha,

E is the efficacy expressed in % mortality of the untreated control using the mixture of A and B at m and n ppm respectively m and n g /ha,

$$\text{then is} \quad E = X + Y - \frac{X \cdot Y}{100}$$

If the observed insecticidal efficacy of the combination is higher than the one calculated as „E“, then the combination of the two compounds is more than additive, i.e., there is a synergistic effect.

10. Example A**Aphis gossypii - test**

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cotton leaves (*Gossypium herbaceum*) which are heavily infested by the cotton aphid (*Aphis gossypii*) are treated by being dipped into the preparation of the active compound of the desired concentration.

After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

According to the present application in this test e.g. the following combination shows a synergistic effect in comparison to the single compounds:

Table A1  
plant damaging insects  
**Aphis gossypii - test**

<u>Active Ingredient</u>	<u>Concentration</u> <u>in ppm</u>	<u>Efficacy</u> <u>in % after 1d</u>
II-1-4	4	25
Diafenthiuron	20 4	15 15
II-1-4 + Diafenthiuron (1 : 1) according to the invention	4 + 4	obs.* 50    cal.** 36,25

\* obs. = observed                      insecticidal                      efficacy

\*\* cal. = efficacy calculated with Colby-formula

Example B***Heliothis armigera* test**

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Soybean shoots (*Glycine max*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the cotton boll worm (*Heliothis armigera*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table B1  
Plant damaging insects  
***Heliothis armigera* - Test**

<u>Active Ingredient</u>	<u>Concentration</u> <u>in ppm</u>	<u>Efficacy</u> <u>in % after 3<sup>d</sup></u>
II-1-4	0,0064	55
Spinosad	0,032	0
II-1-4 + Spinosad (1 : 5) according to the invention	0,0064 + 0,032	obs.* 80    cal.** 55

\* obs. = observed

insecticidal

efficacy

\*\* cal. = efficacy calculated with Colby-formula

Example C**Myzus persicae - test**

Solvent: 78 parts by weight of acetone  
1,5 parts by weight of dimethylformamide

Emulsifier: 0,5 parts by weight of alkylaryl polyglykoether

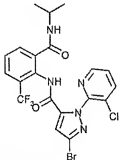
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

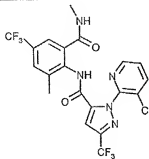
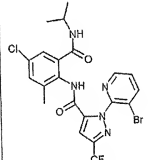
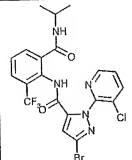
Cabbage leaves (*Brassica oleracea*) which are heavily infested by the green peach aphid (*Myzus persicae*) are treated by being sprayed with the preparation of the active compound at the desired concentration.

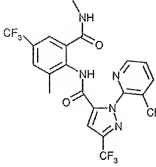
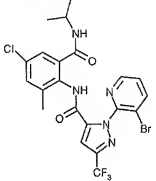
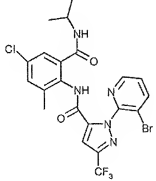
After the specified period of time, the mortality in % is determined. 100 % means that all the aphids have been killed; 0 % means that none of the aphids have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table C1  
Plant damaging insects  
**Myzus persicae - Test**

<u>Active Ingredient</u>	<u>Concentration</u> <u>in g/ha</u>	<u>Efficacy</u> <u>in % after 1d</u>
	4	0
II-1-1	4	30
II-1-24	4	0
II-1-12	4	20
II-1-4		

	4	50
	4	50
II-1-2	4	0
	4	0
Abamectin	4	0
(I-2)	100	0
(I-1)	100	0
 <p>+ Abamectin (1 : 1) according to the invention</p>	4 + 4	$\frac{\text{obs.}^*}{50} \quad \frac{\text{cal.}^{**}}{0}$

 <p>+ Abamectin (1 : 1) according to the invention</p>	4 + 4	<u>obs.*</u> <u>cal.**</u> 70        50
<p>II-1-2 + Abamectin (1 : 1) according to the invention</p>	4 + 4	<u>obs.*</u> <u>cal.**</u> 50        0
 <p>+ Abamectin (1 : 1) according to the invention</p>	4 + 4	<u>obs.*</u> <u>cal.**</u> 50        0
<p>II-1-24 + (I-2) (1 : 25) according to the invention</p>	4 + 100	<u>obs.*</u> <u>cal.**</u> 40        0
<p>II-1-4 + (I-2) (1 : 25) according to the invention</p>	4 + 100	<u>obs.*</u> <u>cal.**</u> 70        50
 <p>+ (I-2) (1 : 25) according to the invention</p>	4 + 100	<u>obs.*</u> <u>cal.**</u> 50        0
<p>II-1-1 + (I-1) (1 : 25)</p>		<u>obs.*</u> <u>cal.**</u>

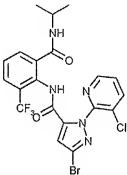
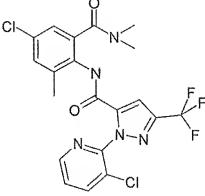
according to the invention	4 + 100	70	30
II-1-12 + (I-1) (1 : 25)		obs.*	cal.**
according to the invention	4 + 100	50	20
II-1-2 + (I-1) (1 : 25)		obs.*	cal.**
according to the invention	4 + 100	50	0

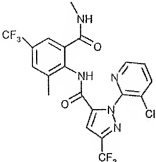
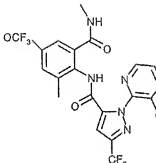
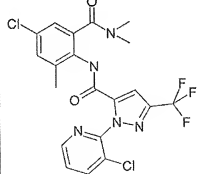
\* obs. = observed insecticidal efficacy  
 \*\* cal. = efficacy calculated with Colby-formula

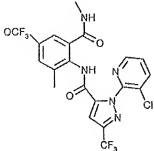
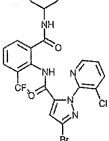
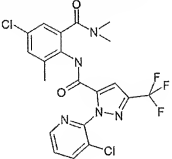
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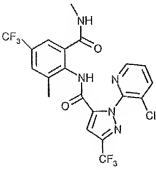
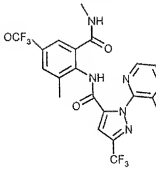


Table C2  
Plant damaging insects  
*Myzus persicae* - Test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in g/ha</u>	<u>Efficacy</u> <u>in % after 6<sup>d</sup></u>
	0,8	0
II-1-52	0,8	10
	0,8	0
II-1-24	4	0
II-1-4	0,8	0

	0,8	0
	0,8	0
Abamectin	0,8	50
Diafenthiuron	0,8	5
(I-2)	20	50
(I-1)	100	0
 <p data-bbox="218 1093 405 1139">+ Abamectin (1 : 1) according to the invention</p>	0,8 + 0,8	$\frac{\text{obs.}^*}{70} \quad \frac{\text{cal.}^{**}}{50}$

 <p>+ Abamectin (1 : 1) according to the invention</p>	0,8 + 0,8	$\frac{\text{obs.}^*}{70}$ $\frac{\text{cal.}^{**}}{50}$
<p>II-1-4 + Diafenthiuron (1 : 1) according to the invention</p>	0,8 + 0,8	$\frac{\text{obs.}^*}{20}$ $\frac{\text{cal.}^{**}}{5}$
 <p>+ (I-2) (1 : 25) according to the invention</p>	0,8 + 20	$\frac{\text{obs.}^*}{80}$ $\frac{\text{cal.}^{**}}{50}$
 <p>+ (I-2) (1 : 25) according to the invention</p>	0,8 + 20	$\frac{\text{obs.}^*}{70}$ $\frac{\text{cal.}^{**}}{50}$

 <p>+ (I-2) (1 : 25) according to the invention</p>	0,8 + 20	<u>obs.*</u> <u>cal.**</u> 90 50
 <p>+ (I-2) (1 : 25) according to the invention</p>	0,8 + 20	<u>obs.*</u> <u>cal.**</u> 70 50
II-1-52 + (I-1) (1 : 25) according to the invention	0,8 + 20	<u>obs.*</u> <u>cal.**</u> 100 10
II-1-24 + (I-1) (1 : 25) according to the invention	4 + 100	<u>obs.*</u> <u>cal.**</u> 80 0
II-1-4 + (I-1) (1 : 125) according to the invention	0,8 + 100	<u>obs.*</u> <u>cal.**</u> 45 0

\* obs. = observed insecticidal efficacy  
 \*\* cal. = efficacy calculated with Colby-formula

Example D**Phaedon cochleariae - test**

Solvent: 78 parts by weight of acetone  
1,5 parts by weight of dimethylformamide

Emulsifier: 0,5 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the mustard beetle (*Phaedon cochleariae*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table D1  
plant damaging insects  
**Phaedon cochleariae - test**

<u>Active Ingredient</u>	<u>Concentration</u> <u>in g/ha</u>	<u>Efficacy</u> <u>in % after 2<sup>d</sup></u>
II-1-54	0,16	33
II-1-12	0,8	17
II-1-4	4	50
(I-2)	100 20 4	0 0 0
(I-1)	100 20 4	0 0 0
II-1-54 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* cal.** 100 33
II-1-12 + (I-2) (1 : 25)		obs.* cal.**

according to the invention	0,8 + 20	50	17
II-1-4 + (I-2) (1 : 25)		obs.*	cal.**
according to the invention	4 + 100	67	50
II-1-54 + (I-1) (1 : 25)		obs.*	cal.**
according to the invention	0,16 + 4	100	33
II-1-12 + (I-1) (1 : 25)		obs.*	cal.**
according to the invention	0,8 + 20	67	17
II-1-4 + (I-1) (1 : 25)		obs.*	cal.**
according to the invention	4 + 100	67	50

\*obs.

=

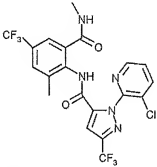
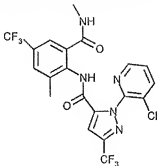
observed

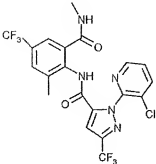
insecticidal

efficacy

\*\* cal. = efficacy calculated with Colby-formula

Table D2  
plant damaging insects  
*Phaedon cochleariae* – test

Active Ingredient	Concentration in g/ha	Efficacy in % after 6d
II-1-52	0,16	33
II-1-24	0,16	33
	0,16	33
(I-2)	4	0
(I-1)	4	0
II-1-52 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* 50 cal.** 33
 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* 67 cal.** 33
II-1-52 + (I-1) (1 : 25) according to the invention	0,16 + 4	obs.* 67 cal.** 33
II-1-24 + (I-1) (1 : 25) according to the invention	0,16 + 4	obs.* 83 cal.** 33

 <p>           +            (I-1) (1 : 25)            according to the invention         </p>	<p>0,16 + 4</p>	<p> <math>\frac{\text{obs.}^*}{83}</math>    <math>\frac{\text{cal.}^{**}}{33}</math> </p>
<p>*obs. =</p>	<p>observed</p>	<p>insecticidal efficacy</p>

\*\* cal. = efficacy calculated with Colby-formula



Example E**Phaedon cochleariae - test**

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being dipped in the preparation of the active compound at the desired concentration and are infested with larvae of the mustard beetle (*Phaedon cochleariae*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the beetle larvae have been killed; 0 % means that none of the beetle larvae have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table E1  
plant damaging insects  
*Phaedon cochleariae* - test

<u>Active Ingredient</u>	<u>Concentration</u>	<u>Efficacy</u>
	<u>in ppm</u>	<u>in % after 4d</u>
II-1-4	0,16	5
Diafenthiuron	20	0
II-1-4 + Diafenthiuron (1:125) according to the invention	0,16 + 20	Obs.* 15 cal.** 5

\* obs. = observed insecticidal efficacy

\*\* cal. = efficacy calculated with Colby-formula

Example F**Plutella xylostella - test**

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Cabbage leaves (*Brassica oleracea*) are treated by being dipped into the preparation of the active compound of the desired concentration and are infested with larvae of the diamond back moth (*Plutella xylostella*) as long as the leaves are still moist.

After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table F1  
plant damaging insects  
*Plutella xylostella* - test

<u>Active Ingredient</u>	<u>Concentration</u>	<u>Efficacy</u>
	<u>in ppm</u>	<u>in % after 6<sup>d</sup></u>
II-1-4	0,0064	37,5
Abamectin	0,00128	12,5
II-1-4 + Abamectin (5 : 1) according to the invention	0,0064 + 0,00128	<div>obs.* cal.**</div> <div>62,5 45,32</div>

\* obs.

=

observed

insecticidal

efficacy

\*\* cal. = efficacy calculated with Colby-formula

**Example G****Spodoptera frugiperda - test**

Solvent: 78 parts by weight of acetone  
1,5 parts by weight of dimethylformamide

Emulsifier: 0,5 parts by weight of alkylaryl polyglycoether

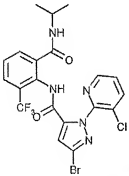
To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

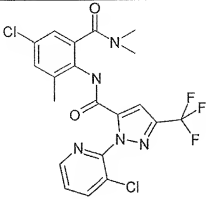
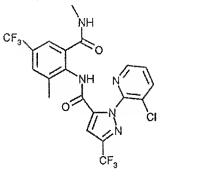
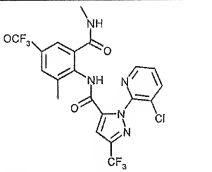
Cabbage leaves (*Brassica oleracea*) are treated by being sprayed with the preparation of the active compound at the desired concentration and are infested with larvae of the fall army worm (*Spodoptera frugiperda*) as long as the leaves are still moist.

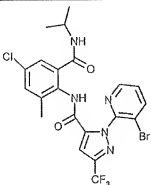
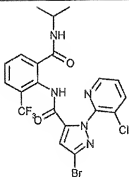
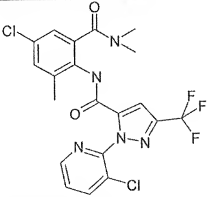
After the specified period of time, the mortality in % is determined. 100 % means that all the caterpillars have been killed; 0 % means that none of the caterpillars have been killed.

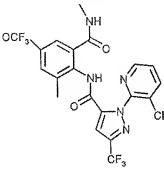
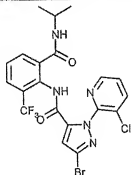
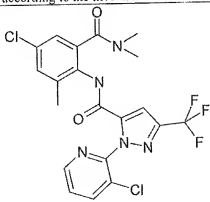
According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

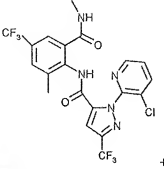
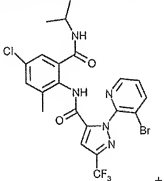
Table G1: *Spodoptera frugiperda* – test

<u>Active Ingredient</u>	<u>Concentration</u> <u>in g/ha</u>	<u>Efficacy</u> <u>in % after 2<sup>d</sup></u>
	4	0
II-1-54	0,16	33
II-1-1	0,16	33

	4	50
	4	67
	4	33
II-1-2	0,8 0,16	67 33

	4	83
Abamectin	4 0,8	0 0
(I-2)	100 20 4	0 0 0
(I-1)	100 4	0 0
 + Abamectin (1 : 1) according to the invention	4 + 4	$\frac{\text{obs.}^*}{17}$ $\frac{\text{cal.}^{**}}{0}$
 + Abamectin (1 : 1) according to the invention	4 + 4	$\frac{\text{obs.}^*}{100}$ $\frac{\text{cal.}^{**}}{50}$

II-1-2 + Abamectin (1 : 1) according to the invention	0,8 + 0,8	obs.* 83	cal.** 67
II-1-54 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* 83	cal.** 33
II-1-1 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* 83	cal.** 33
 (1 : 25) according to the invention + (I-2)	4 + 100	obs.* 50	cal.** 33
II-1-2 + (I-2) (1 : 25) according to the invention	0,8 + 20	obs.* 83	cal.** 67
 25) according to the invention + (I-1) (1 :	4 + 100	obs.* 17	cal.** 0
 (I-1) (1 : 25) according to the invention +	4 + 100	obs.* 83	cal.** 50

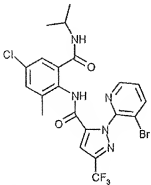
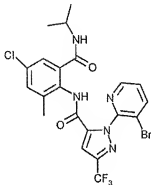
 <p>(I-1) (1 : 25) according to the invention</p>	4 + 100	<table><tr><td>obs.*</td><td>cal.**</td></tr><tr><td>83</td><td>67</td></tr></table>	obs.*	cal.**	83	67
obs.*	cal.**					
83	67					
II-1-2 + (I-1) (1 : 25) according to the invention	0,16 + 4	<table><tr><td>obs.*</td><td>cal.**</td></tr><tr><td>67</td><td>33</td></tr></table>	obs.*	cal.**	67	33
obs.*	cal.**					
67	33					
 <p>(I-1) (1 : 25) according to the invention</p>	4 + 100	<table><tr><td>obs.*</td><td>cal.**</td></tr><tr><td>100</td><td>83</td></tr></table>	obs.*	cal.**	100	83
obs.*	cal.**					
100	83					

\* obs. = observed      insecticidal      efficacy

\*\* cal. = efficacy calculated with Colby-formula

Table G2  
plant damaging insects  
*Spodoptera frugiperda* – test

Active Ingredient	Concentration	Efficacy
	in g/ha	in % after 6 <sup>d</sup>

	0,16	83
(1-2)	4	0
 <p>+ (1-2) (1 : 25) according to the invention</p>	0,16 + 4	$\frac{\text{obs.}^*}{100}$ $\frac{\text{cal.}^{**}}{83}$

\* obs. = observed      insecticidal      efficacy  
 \*\* cal. = efficacy calculated with Colby-formula

Example H**Tetranychus test (OP-resistant/dip test)**

Solvent:      78 parts      by      weight      of      acetone  
                  1,5 parts by weight of dimethylformamide

Emulsifier:      0,5 parts by weight of alkylaryl polyglykolether

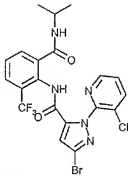
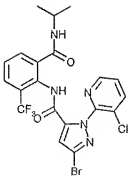


To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Bean plants (*Phaseolus vulgaris*) which are heavily infested with all stages of the two-spotted spider mite (*Tetranychus urticae*) are treated by being sprayed with the preparation of the active compound at the desired concentration.

After the specified period of time, mortality in % is determined. 100 % means that all the spider mites have been killed; 0 % means that none of the spider mites have been killed. According to the present application in this test e.g. the following combination showed a synergistic effect in comparison to the single compounds:

Table H1  
Plant damaging mites  
Tetranychus urticae (OP-resistant) – Test

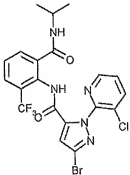
Active Ingredient	Concentration in g/ha	Efficacy in % after 2 <sup>d</sup>
	4	0
II-1-52	0,8	0
II-1-1	0,16	0
II-1-12	4	0
II-1-2	4	0
(I-1)	100 20 4	50 10 0
 + (I-1) (1 : 25) according to the invention	4 + 100	obs.* cal.** 80 50
II-1-52 + (I-1) (1 : 25) according to the invention	0,8 + 20	obs.* cal.** 50 10

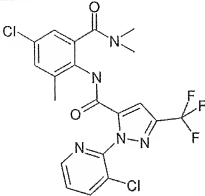
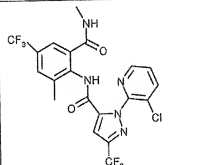
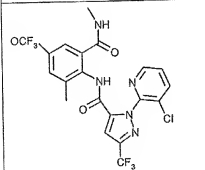
II-1-1 + (I-1) (1 : 25) according to the invention	0,16 + 4	obs.* 70	cal.** 0
II-1-12 + (I-1) (1 : 25) according to the invention	4 + 100	obs.* 99	cal.** 50
II-1-2 + (I-1) (1 : 25) according to the invention	4 + 100	obs.* 70	cal.** 50

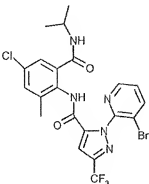
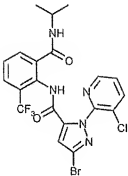
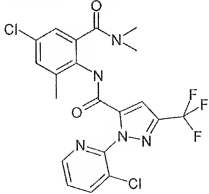
\*obs. = observed  
 \*\* cal. = efficacy calculated with Colby-formula

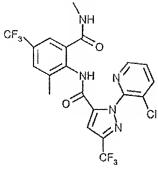
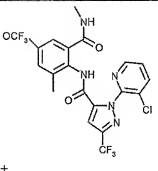
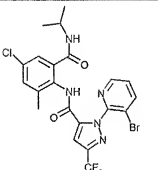
insecticidal efficacy

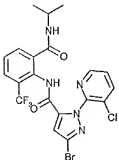
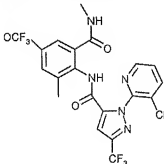
Table H2  
 Plant damaging mites  
 Tetranychus urticae (OP-resistant) – Test

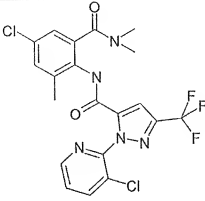
Active Ingredient	Concentration	Efficacy
	in g/ha	in % after 6 <sup>d</sup>
	0,032	0
II-1-54	0,032	0
II-1-52	0,032	0
II-1-1	0,16	0

	0,032 0,0064	0 0
II-1-24	0,032	0
II-1-12	0,032	0
II-1-4	4	0
	0,032 0,0064	0 0
	0,032	0
II-1-2	0,0064	0

	0,0064	0
Abamectin	0,032 0,0064	80 20
(I-2)	100 4 0,8	80 70 20
(I-1)	100 0,8	80 20
 + Abamectin (1 : 1) according to the invention	0,032 + 0,032	$\frac{\text{obs.}^*}{100}$ $\frac{\text{cal.}^{**}}{80}$
 +	0,0064 + 0,0064	$\frac{\text{obs.}^*}{50}$ $\frac{\text{cal.}^{**}}{20}$

<p>Abamectin (1 : 1) according to the invention</p>  <p>+ Abamectin (1 : 1) according to the invention</p>	0,0064 + 0,0064	<p>obs.* 60</p> <p>cal.** 20</p>
 <p>+ Abamectin (1 : 1) according to the invention</p>	0,032 + 0,032	<p>obs.* 100</p> <p>cal.** 80</p>
<p>II-1-2 + Abamectin (1 : 1) according to the invention</p>	0,0064 + 0,0064	<p>obs.* 50</p> <p>cal.** 20</p>
 <p>+ Abamectin (1 : 1) according to the invention</p>	0,0064 + 0,0064	<p>obs.* 80</p> <p>cal.** 20</p>

 <p>           +            (I-2) (1 : 25)            according to the invention         </p>	0,032 + 0,8	obs.* cal.** 40 20
II-1-54 + (I-2) (1 : 25) according to the invention	0,032 + 0,8	obs.* cal.** 70 20
II-1-52 + (I-2) (1 : 25) according to the invention	0,032 + 0,8	obs.* cal.** 50 20
II-1-1 + (I-2) (1 : 25) according to the invention	0,16 + 4	obs.* cal.** 90 70
II-1-24 + (I-2) (1 : 25) according to the invention	0,032 + 0,8	obs.* cal.** 70 20
II-1-12 + (I-2) (1 : 25) according to the invention	0,032 + 0,8	obs.* cal.** 60 20
II-1-4 + (I-2) (1 : 25) according to the invention	4 + 100	obs.* cal.** 99 80
 <p>           +            (I-2) (1 : 25)            according to the invention         </p>	0,032 + 0,8	obs.* cal.** 40 20
II-1-54 + (I-1) (1 : 25) according to the invention	0,032 + 0,8	obs.* cal.** 100 20

 <p>+ (I-1) (1:25) according to the invention</p>	0,032 + 0,8	$\frac{\text{obs.}^*}{70}$ $\frac{\text{cal.}^{**}}{20}$
II-1-24 + (I-1) (1:25) according to the invention	0,032 + 0,8	$\frac{\text{obs.}^*}{70}$ $\frac{\text{cal.}^{**}}{20}$
II-1-4 + (I-1) (1:25) according to the invention	4 + 100	$\frac{\text{obs.}^*}{100}$ $\frac{\text{cal.}^{**}}{80}$
*obs. =	observed	insecticidal
** cal. = efficacy calculated with Colby-formula		efficacy

Example I**Tetranychus test** (OP-resistant/dip test)

Solvent: 7 parts by weight of dimethylformamide

Emulsifier: 2 parts by weight of alkylaryl polyglycoether

To produce a suitable preparation of active compound, 1 part by weight of active compound is mixed with the stated amount of solvent and emulsifier, and the concentrate is diluted with emulsifier-containing water to the desired concentration.

Bean plants (*Phaseolus vulgaris*) which are heavily infested with all stages of the two-spotted spider mite (*Tetranychus urticae*) are treated by being dipped in the preparation of the active compound at the desired concentration.

After the specified period of time, mortality in % is determined. 100 % means that all the spider mites have been killed; 0 % means that none of the spider mites have been killed.

According to the present application in this test e.g. the following combinations show a synergistic effect in comparison to the single compounds:

Table II  
Plant damaging mites  
**Tetranychus urticae (OP-resistant) – Test**



<u>Active Ingredient</u>	<u>Concentration</u> <u>in ppm</u>	<u>Efficacy</u> <u>in % after 7d</u>
II-1-9	100	0
(I-2)	0,8	0
(I-1)	0,8	65
II-1-9 + (I-2) (125 : 1) according to the invention	100 + 0,8	obs.* cal.** 20 0
II-1-9 + (I-1) (125 : 1) according to the invention	100 + 0,8	obs.* cal.** 95 65

\*obs. = observed  
 \*\* cal. = efficacy calculated with Colby-formula

Insecticidal efficacy

11. The undersigned declares further that all statements made herein of his/her own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Monheim, Germany,

1. 12. 2010  
Date

Reike Hys  
NAME